

# The impact of digital in learning spaces:

## An analysis on the perspective of teachers in higher education.



**Pedro Silva**

Escola Superior de Tecnologias de Castelo Branco

Instituto Politécnico de Castelo Branco  
Castelo Branco, Portugal

[psilva@ipcb.pt](mailto:psilva@ipcb.pt)

**Luís Borges Gouveia**

Universidade Fernando Pessoa  
Porto, Portugal

[lbmg@ufp.pt](mailto:lbmg@ufp.pt)



Instituto Politécnico de Castelo Branco  
Escola Superior de Tecnologia



iSITE 2013  
Porto  
Portugal



# Introduction

This **presentation** is the result of a qualitative research conducted between February 2012 and June 2012

## Main objective :

**Understand the perceptions of Professors in their Learning Environments.**

It has been considered relevant to gather opinions on the:

**needs/priorities, utility, quality and sustainability**, as a result of the use of Information and Communication Technologies (ICT) in the teaching/learning spaces.

## Contribution :

Facilitate the **creation of new Learning Environments and make a discussion of space's component organization** as one of the important factors in the creation of a learning space.

The proposals advanced (resulting from the interviews to the teachers of Higher Education) produced important contributions and confirm the need to make changes.



# Introduction

Universities are face to face (f2f) with a new teaching reality

## THE TECHNOLOGY

*The technology changes affect the teaching and learning processes and the places they are possible*

## STUDENTS are different

- Digital
- Connected
- Want to create and learn at the same time



## KNOWLEDGE SOURCES

*Students can access to that contents and study by themselves, developing therefore individual and group skills*

*Study by themselves in any place with Internet and they also can, if they have questions, use the email to clear up all doubts and solve problems with their tutors*



# Introduction

Universities are face to face (f2f) with a new teaching reality



The impact of digital in  
learning spaces

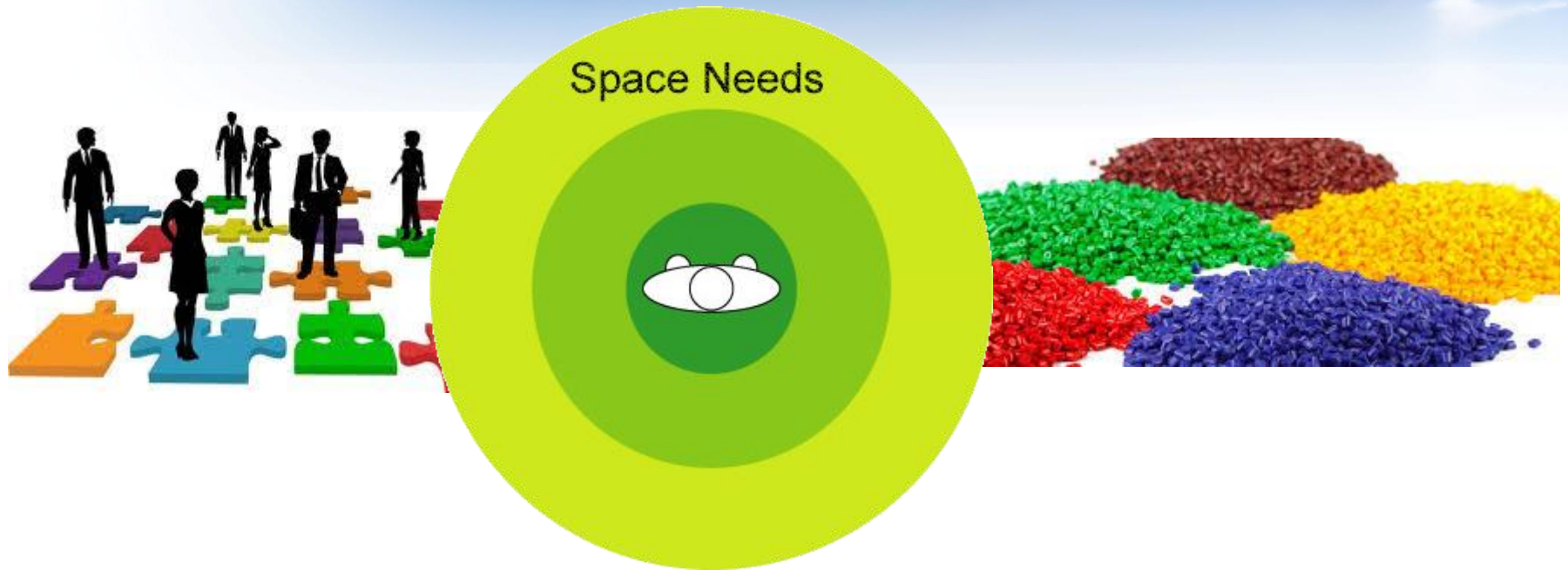
*Universities have **insufficient or inappropriate learning spaces**; they are too small, very dark or cold, made in the wrong places, etc.*

*These places have many deficiencies and so, they **waste learning opportunities**.*

*A Learning Space requires a **complex set of materials and human resources**.*

# Introduction

*Find new ideas about space needs represents a significant opportunity for higher education to make learners and learning more successful*



*human resources and materials.*



# Data and Research Methods

The purpose of the perceptions of Learning Environments was to **capture a set of personal experiences related to spaces used by teachers, particularly the “classroom”, collaborative spaces, social spaces and virtual spaces.**



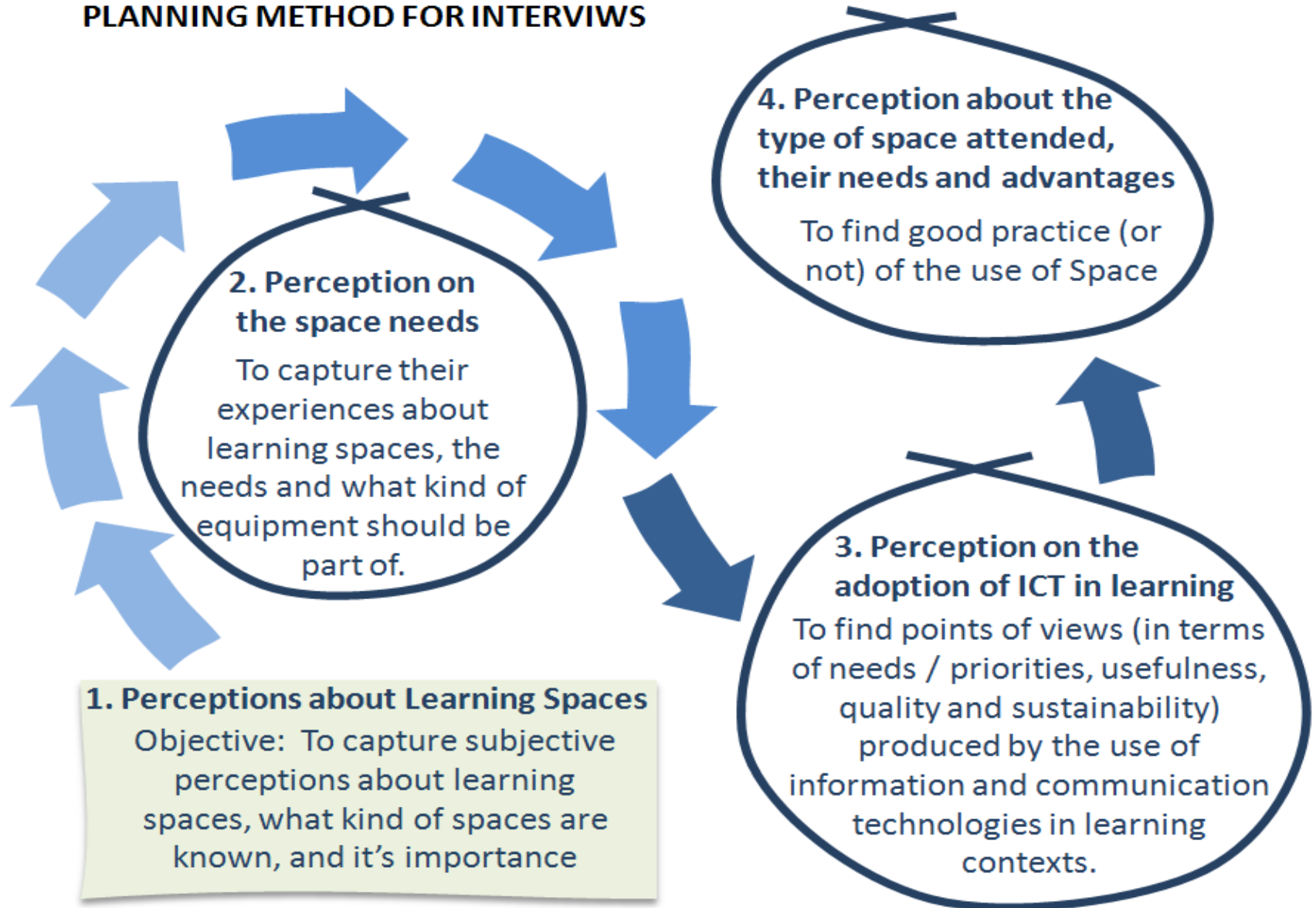
© Ron Leishman • www.ClipartOf.com/439301

All the interviews **were tape-recorded** with the teacher's permission, and later **transcribed to provide accurate records for the analysis.**

Standard procedures were followed to maintain the confidentiality of the interview data and the anonymity of the teachers

# Data and Research Methods

## PLANNING METHOD FOR INTERVIWS



# Data and Research Methods

A criterion Sampling scheme has been used to select teachers for the interviews.

## Criterion sampling

To select teachers for the interviews

1

Being a Higher Education teacher

2

Vast experience in higher education, more than 10 years

3

Being involved in research projects in the field of Information Systems, Learning Spaces, or Virtual Learning environments and Distance Education (eLearning)

4

Using Information and Communication Technologies and teaching in an environment where technology exists



# Data and Research Methods

The interviews were face-to-face.

Between the first and second interviews, almost three months passed.

Based on our **previous research experience**, interviewing teachers, we felt a second interview was required to build a theory.

A strong rapport was necessary to obtain trustworthy data.

# Data and Research Methods

The analysis of data :

First the participants were assigned identification numbers.



**Audio-taped interviews were verbatim transcribed**

Checked for accuracy and edited by the first author, to ensure that the transcriptions reflected the actual interviews, by simultaneously listening to the recordings while reading the transcriptions and making corrections where necessary

# Results and Discussion

This investigation suggests many positive consequences and different points of view on the **Best Practices about the use of teaching/learning spaces.**

- (i) Perceptions of Learning Environments;
- (ii) Perception on the space needs;
- (iii) Perception on the adoption of ICT in learning;
- (iv) Perception about the type of attended space, their needs and advantages.

# Results and Discussion

## *Perceptions of Learning Environments*

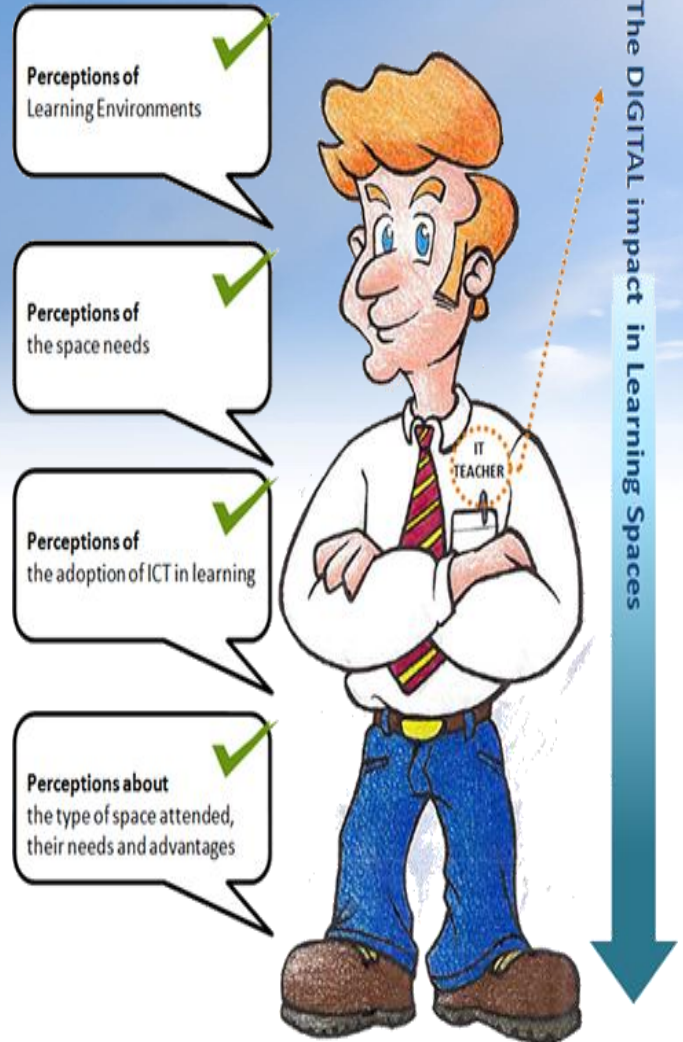
They all share the idea that the **classroom's space must change**, because of the new teaching methodologies

***Collaborative spaces must exist with all the needed resources***

**Collaborative spaces - better integration** with the space and the classroom space is possible

These spaces should, besides the educational environment to **support the student's learning**,

also have : **personal tools to prepare classes**, to support material, to **perform administrative tasks**, to **seek information** and materials and to be used as **an interactive-communication tool** between teachers and educational partners.



# Results and Discussion

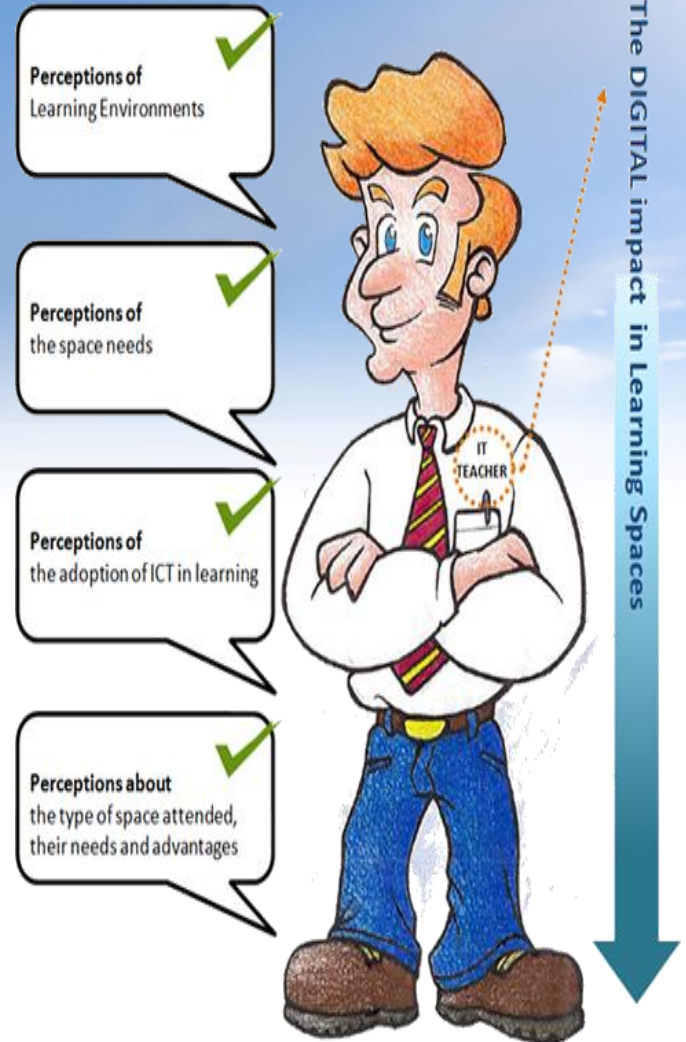
## *Perception of the space needs*

*The traditional classroom space is **too limited**, **knowledge flows in only one direction**. **Interaction** between the teacher and students is almost impossible.*

*This paradigm leads to changes in **students** and **teachers** attitudes*

*Important create a **psychological comfortable atmosphere** between teachers and students in order to improve physical comfort*

*it is important to **create individual spaces** for each student, the existence of **open spaces**, **smaller learning spaces**, classrooms with **mobilization facilities** and the creation of “activity islands”*





# Results and Discussion

## *Perception on the adoption of ICT in learning*

*The role of ICT is very important, but teachers must **dominate** them. More and more new technologies must be part of education*

*ICT in learning process is important **but only as an extension of instrumental capabilities** at the service of the learning process*

Perceptions of  
Learning Environments

Perceptions of  
the space needs

Perceptions of  
the adoption of ICT in learning

Perceptions about  
the type of space attended,  
their needs and advantages



The DIGITAL impact in Learning Spaces

# Results and Discussion

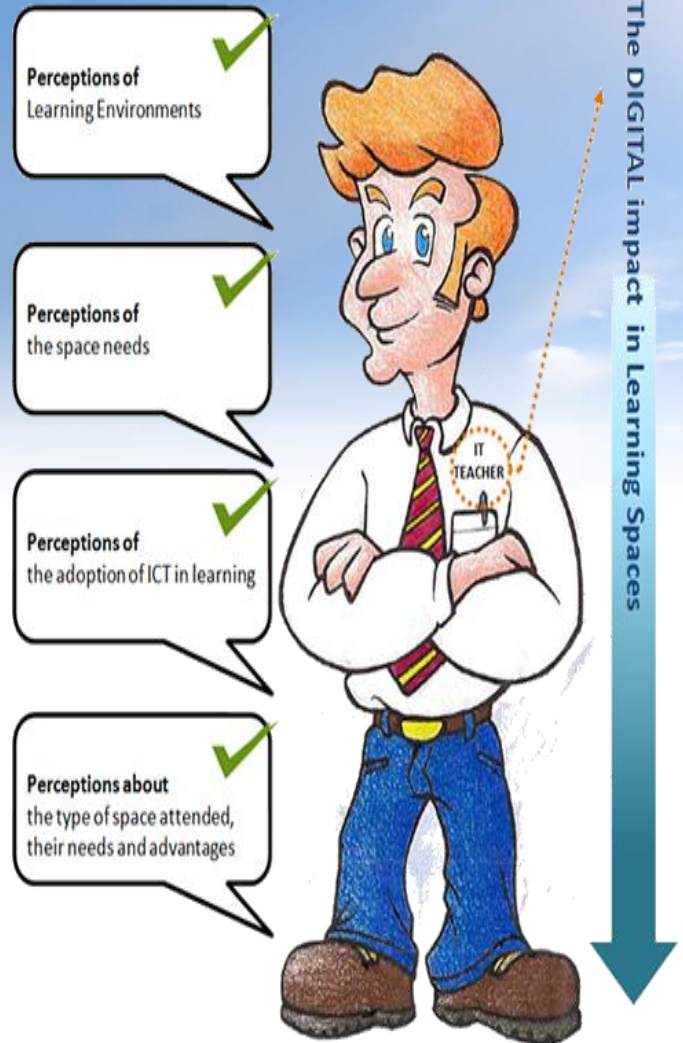
*Perception about the type of space attended, their needs and advantages*

*human relationship between people (teachers and students), it is easy and makes a difference*

*activities have to go out of what is traditionally a classroom(...) a social space, and the **provided spaces for group work** and the possibility of them being performed*

*a smart design with open areas where teachers and students communicate and technology*

change attitudes and practices in order to obtain **optimization, integration** and development of knowledge



# Conclusion

Our Intent :

**complement and expand the knowledge about space use in higher education.**

The results confirm our central hypotheses:



**The importance of Space in creating high quality Learning Spaces.**

That **technology's adoption** is important but is not the only factor taken into consideration to create these spaces.

Changes in **design comfort and Decoration and Cultural Change** must be part of a Learning Space.



# Conclusion

- New areas, such as the **collaborative learning spaces**, should be considered in the organization.
- Changes in furniture design, comfort and decoration, how the materials are arranged and organized, seem to influence the teaching and learning processes.
- The **cultural change, Social spaces and Informal learning environments**, seem to be a key role to a good psychological environment and motivate the participation in school activities.
- The **use of Virtual** as an available tool to teaching and learning and its necessary integration with the physical, seem to be essential.
- A **flexible learning space enables** the student to make choices and to have some control over the time and place and, sometimes, also to make choices in the content of their learning.